

1

2

3

4

5

6

7

8

9

TRANSCRIPT OF PROCEEDINGS

10

11

WEDNESDAY, NOVEMBER 16, 2005

12

ALTADENA COMMUNITY CENTER

13

730 E. ALTADENA DRIVE

14

ALTADENA, CALIFORNIA 91001

15

16

17

18

19

20

21

22

23

24

25

1 APPEARANCES:
2 STEVE SLATEN - NASA
3 MERRILEE FELLOWS- NASA
4 MARK RIPPERDA - US EPA
5 GARY TAKARA - PASADENA WATER & POWER
6 BRAD BOMAN - PASADENA WATER & POWER
7 LORI GARNER - BATTELLE/NASA
8 SUSAN SANTOS - FOCUS GROUP/NASA
9 KEITH FIELDS - BATTELLE/NASA
10 NICK AMINI - BATTELLE/NASA
11 LARRY DUNCAN - LINCOLN AVENUE WATER CO, BOARD OF DIRECTORS
12 DICK FIEDLER - LINCOLN AVENUE WATER CO, BOARD OF DIRECTORS
13
14
15
16
17
18
19
20
21
22
23
24
25

1 Altadena, California, Wednesday, November 16, 2005

2 7:05 p.m.

3

4 MS. FELLOWS: Welcome tonight. We are always happy
5 to see the residents interested in what we are doing to
6 clean up the water here.

7 I'm Merrilee Fellows. I'm Manager of Outreach
8 for NASA's groundwater cleanup program at JPL. And
9 before I start any further, I want to introduce a few
10 people.

11 Mark Ripperda is back there. He is with the
12 U.S Environmental Protection Agency. He is one of the
13 regulators with basic oversight of our program.

14 You also have Brad Boman here and
15 Gary Takara from Pasadena Water and Power and
16 Larry Duncan from the board of directors for the Lincoln
17 Avenue Water Company. And also with us is Dr. Susan
18 Santos, who is one of our consultants that works with
19 us.

20 And we have a number of other consultants and
21 assistants here tonight. So afterwards, if anybody has
22 questions, go to any one of us, and we will either answer
23 or refer you to someone that can.

24 Our primary focus tonight is on the expansion
25 of the onsite treatment plant at JPL and that is

1 described in the proposed plan. There are copies out
2 there and also little short fact sheets on it.

3 In a minute, I'm going to introduce
4 Steve Slaten. He manages the program for us. But first
5 -- I will sketch a little bit about how this meeting
6 is going to work. The formats will be a little bit
7 different than the formats you have seen recently.

8 First, Steve is going to give us a brief
9 background of the overall cleanup process. I know you
10 are all interested in that. And then he is going to
11 follow that with a summary of the proposed plan.

12 And then we are going to ask for any informal
13 general comments that might help you clarify things, if
14 you want to make formal comments on the record about
15 this proposed plan at JPL, then if you have anything
16 that is kind of on your mind or you don't understand,
17 you can ask Steve that. And then we will go to the
18 formal session and we will take public comments that
19 will become part of our record. And we will do that
20 with the court reporter capturing every word during the
21 formal comments.

22 Then what we do after that is we put together a
23 document that is called a responsiveness summary that
24 takes all the comments that we have received and the
25 replies to those, in general. And this summary will be

1 available on our website, or if you don't have Internet
2 access or would like a copy, you can get my address and
3 get a copy -- or ask for a copy by e-mail.

4 And all these comments that you make, if you
5 make any, will become part of our decision making
6 record, and NASA uses that to do what is called an
7 interim record of decision. The word "interim" there
8 refers to the fact this is on-site cleanup. It's just
9 one part of NASA's overall cleanup.

10 Then after we go through all formal comments
11 about the on-site plant, if you have questions about
12 anything in our groundwater cleanup program on JPL, off
13 JPL, in general, that will be your chance to do it. So
14 don't feel put off if we sort of move you to the end
15 because we really have the statutory process we have to
16 follow to get the formal comments first.

17 We are also going to be available after the
18 program. We have got posters, exhibits back there. We
19 will move these back out, if that is easier, so you can
20 just walk around and talk to people about your
21 individual questions.

22 Finally, if you think, after you leave or later
23 tonight, gee, I did want to make formal comments on
24 JPL's proposed plan, our comment period will last
25 through December 15th so you can reply to that any time.

1 We have got some little comment notices, and we have
2 got -- thanks, Susan -- and we have got a flier on how
3 to send in the materials to me either by e-mail or by
4 mail, so there's a lot of ways for you to do that.

5 And finally, I have a little question just for
6 my own information.

7 How many of you heard about this through the
8 newsletters that were mailed out -- the meeting tonight?
9 That's good.

10 How about through the newspaper ads? Okay.

11 And after the program, we're going to have --
12 staff will ask you -- we are going to have evaluation
13 forms and ask you questions like that and some others.
14 And it really does help us -- it helps us spend our
15 money right in targeting and getting the most bang for
16 the buck in the most effective way of reaching you.
17 There are all kinds of ways. There are ads on radio,
18 ads on TV. I mean, there are e-mails we can send to
19 you. We are just trying to get some ideas about the
20 best way -- how you get information, how you respond to
21 it best. So please help fill out those evaluations.

22 Now, I want to introduce Steve Slaten. He is
23 the Remedial Project Manager for the project, and I will
24 turn the meeting over to him.

25 MR. SLATEN: Thank you, Merrilee.

1 (Proceedings held off the record.)

2 MS. FELLOWS: Now, what we want to do is, as I said
3 before, before we go to the formal comments, if anybody
4 wants to make them on the record, we want to give you a
5 chance on this issue right here, the JPL on-site, to see
6 if you had any clarifying questions you want to ask
7 before we go to that.

8 Dorothy.

9 Dorothy, do you want to bring the mike up --

10 DOROTHY THORMAN: Let's see. Does this plan -- do
11 the volatile compounds [get cleaned], as well as the
12 perchlorate, I mean, at the same time, or --

13 MR. SLATEN: Yes. The water is pumped up, and in
14 the treatment plant, it goes first. And the carbon
15 filters take out the VOCs. And then the next step is
16 that the bugs destroy the perchlorate. So when it comes
17 out, it's cleaned up of all the chemicals.

18 MS. FELLOWS: So the same stream of water comes
19 through here, and there's little pipes that you can see
20 if you get up close that just takes it over there. Same
21 cell of water, if you will.

22 MELODY COMFORT: Right in line with that, when
23 the bacteria ingests the perchlorate, what really
24 happens to the bacteria? I mean --

25 MR. SLATEN: They actually use the oxygen for

1 respiration. They bring it in. And there are people
2 here who are microbiologists, experts, that can tell you
3 a lot more exactly. But they use it, and they feed on
4 it, and they are able to live and reproduce, along with
5 the other nutrients that are there.

6 MELODY COMFORT: So the bacteria, say, there
7 was an earthquake, the tank fell over, the bacteria, so
8 are they harmless?

9 MR. SLATEN: They --

10 MELODY COMFORT: They do not have any
11 perchlorate? There are no dangerous compounds within the
12 bacteria?

13 MR. SLATEN: They do not concentrate any of this.
14 They destroy it. They break down the perchlorate into
15 oxygen for chlorine.

16 MELODY COMFORT: That's fascinating.

17 MR. SLATEN: Break apart and use the oxygen for
18 respiration.

19 Yes?

20 UNIDENTIFIED SPEAKER: Obviously, you have run soil
21 tests on this to find out where the concentrations are.

22 So do you know the boundary of the high
23 concentrations in the soil in your water table now?

24 MR. SLATEN: Yeah. We have --

25 UNIDENTIFIED SPEAKER: Say the outside boundary --

1 MR. SLATEN: We have dozens of monitoring wells.

2 How many monitoring -- Keith, how many
3 monitoring ports do we have?

4 MR. FIELDS: We have 25 wells that are active, and
5 some of the wells have multiple levels, which monitor
6 the groundwater. I think there's 82 total locations
7 where we take --

8 MR. SLATEN: So the answer is from -- and we have a
9 pretty good -- we have a good placement of monitoring
10 wells around this area and that's what -- maybe it's
11 easier to see on the lower one.

12 Each of these wells is a monitoring well
13 that's in this closed area. So it's half a dozen of
14 them here relatively close by the source area. So the
15 answer is we know quite a bit about where the chemicals
16 are in the subsurface.

17 UNIDENTIFIED SPEAKER: Good.

18 MS. FELLOWS: Dorothy has a question.

19 DOROTHY THORMAN: Well, now, you said -- you said
20 that -- that one center that is in the middle graph --
21 was -- was -- you were working on the ground, the soil,
22 and then you said something about the gas.

23 MS. FELLOWS: It's -- yeah.

24 MR. SLATEN: Yeah. In -- up on the facility, in the
25 vicinity of what we're calling now the source area, for

1 help of understanding it, it is the area where they have
2 several of these seepage pits where they put chemicals
3 into the ground. Some of the chemicals, especially the
4 volatile organic compounds -- things kind of like
5 gasoline and clean -- and dry cleaner fluid type fluid
6 and --

7 MS. FELLOWS: Cleaning solvents.

8 MR. SLATEN: -- cleaning solvents that are used for
9 cleaning metals, some of those were stuck in the dry
10 soil above the groundwater. And over the last few years
11 we put in dry wells, if you will, and put a big vacuum
12 cleaner on them and sucked that air out. And when you
13 suck on the air, those volatiles came with it because
14 they would evaporate into that soil gas into the air and
15 come up, and we were able to clean it up.

16 MS. FELLOWS: So what he means when he says a gas,
17 it is these particles that are volatilized that kind of
18 float in the air.

19 DOROTHY THORMAN: So what happens to them?

20 MR. SLATEN: In that case, they are vacuumed up, put
21 through a carbon filter, which grabs hold of the
22 chemicals, and clean air comes out of the end of the
23 vacuum cleaner bag.

24 MS. FELLOWS: And what do we do with the vacuum
25 cleaner?

1 MR. SLATEN: And then the carbon, when it gets
2 enough of the chemicals in the carbon, we have to send
3 the carbon off for -- to be disposed, to be permanently
4 destroyed at a licensed disposal facility.

5 UNIDENTIFIED SPEAKER: I had two questions similar.
6 But, anyway, once you are up and --

7 MS. FELLOWS: Here is the mike.

8 UNIDENTIFIED SPEAKER: Well, I don't think I need it.
9 Once you are up and running and you have everything set
10 up, how long do you think that will be before you have
11 all the wells you want, all the extraction wells and all
12 that? Because you say now you are going to increase it.

13 Are you going to keep increasing it, and are
14 you going to step off the premises of the JPL area to
15 continue doing that or --

16 MR. SLATEN: With this treatment plant, I -- we
17 believe, and, of course, we're going to walk -- of
18 course, we watch what we do. We're going to evaluate
19 how well it works. But with this treatment plant and
20 what -- we know quite a bit about the area -- we know
21 quite a bit. And that's why we put this in as a
22 demonstration treatment plant so we can learn. And we
23 have learned a lot. We have learned a lot about how to
24 construct, how to operate, where it needs to be. We
25 have learned a lot. So we think these two more wells

1 will probably give us a very good control of this source
2 area. We spent about \$4 million putting in the
3 demonstration plant last year. We are going to spend
4 about another million dollars this year expanding it.
5 And I think it's going to need to operate probably on
6 the order of a decade, maybe more, before it completes
7 the cleanup.

8 UNIDENTIFIED SPEAKER: So thank you.

9 MS. FELLOWS: Any other questions on this issue?

10 DOROTHY THORMAN: Well, what -- what else is -- is
11 there anything else that is contaminating the aquifer,
12 you know, the -- the water?

13 MR. SLATEN: Yeah. All over the country, all over
14 the world, man-made chemicals have gotten into the
15 groundwater, okay, and that's why there's a lot of work
16 for people like me. Because there's a lot of cleanup
17 work that needs to be done because a very important
18 resource has been impacted in a lot of places.

19 We know a lot about what the chemicals from JPL
20 that were disposed here -- we know a lot about those and
21 where they are and where they are going, and we are
22 continually investigating to make sure we know
23 everything we need to know about it. But there are
24 chemicals in groundwater in different places around the
25 basin that have gotten there from other sources than

1 from JPL.

2 UNIDENTIFIED SPEAKER: But the result is you are
3 cleaning that up too?

4 MR. SLATEN: No. I don't pay to clean up other
5 people's problems.

6 UNIDENTIFIED SPEAKER: What's in there, it is being
7 cleaned up as well. I mean, your cleaning process is
8 cleaning everything that is contaminated in there?

9 MR. SLATEN: In the water that we pull up, yes.
10 I can give you an example.

11 La Cañada, uphill and upgradient from JPL, has
12 used septic tanks for a long time, and they have known
13 that that's causing a problem. That put nitrates into
14 the groundwater, which is not a good thing.

15 And you can watch those nitrates, plus some
16 other dry cleaners have impacted with dry cleaning
17 fluids. We have monitoring wells, and we can watch
18 those chemicals flowing down and past us, and they go on
19 to impact mostly other peoples' wells. Those aren't
20 flowing up onto our site right now, but it gives you an
21 idea. There are other chemicals in the groundwater from
22 other sources, and everybody needs to be careful to
23 protect the resource.

24 MS. SANTOS: (Inaudible) systems and what NASA is
25 cleaning up, do you know all the chemicals that you need

1 to clean up, and are you doing that on-site?

2 MR. SLATEN: Yes. We look for hundred -- we have
3 looked for hundreds of chemicals. We have been in this
4 process for over a decade of defining what the problem
5 is, what chemicals are there, where they are. We define
6 what chemicals we have and which ones need to be
7 addressed, and we are taking care of all of them.

8 MS. FELLOWS: Any other questions on this part?

9 Okay. Steve, thanks.

10 We are going to open it up now. The court
11 reporter will capture any formal comments. These, as I
12 said, will become part of our record for our decision
13 making, and there's not a requirement that you speak
14 now. You can send us written comments; you can e-mail
15 them. If you think later you want to say something, you
16 can write it on one of those little comment cards, and
17 they all become part of the record. And this is your
18 chance. So we will give you a microphone.

19 And say your name and your affiliation for the
20 record, if you would.

21 Doesn't look like you are all jumping at this
22 chance. And as I said, I don't want to make you.

23 Just a second, and then we can...

24 Do you want to make a formal statement for the
25 record?

1 BARBARA BENTON: You know me, yes.

2 MS. FELLOWS: Okay. Good.

3 BARBARA BENTON: My name is Barbara Benton.

4 Anyway, I spoke before this whole thing got
5 started because I had stopped at the corner of my street
6 about two or three years ago when they were testing one
7 of the wells. And I said "What are you doing?"

8 So my concern as a retired nurse and as a
9 35-year resident of the area are the health
10 implications. We have had many deaths in my community,
11 mostly of cancer, various kinds. We had a doctor that I
12 used to work with at USC last year. He says it doesn't
13 show up in the records -- demographic records for
14 cancer. We have had several deaths since I was here.

15 And I am truly concerned about my own health.
16 I wasn't here in March. And as I think back, I was
17 having some GI problems, and I went to the doctor, and
18 there's something on my pancreas, which isn't cancerous,
19 but why is it there? How did it get there?

20 You know, they biopsied it and said it was
21 nonmalignant. And it may or may not have had anything
22 to do with it. But I lived here for 35 years. There
23 has to be chemical implications; otherwise, why do you
24 want to clean it up? You see.

25 And I want somebody to address that. And I

1 think all your charts and pretty pictures are nice, but
2 the issue is, how is it impacting the health of not just
3 the residents, but the JPL employees who have been there
4 for a career. I want to know. And I want somebody to
5 tell me the truth.

6 MS. FELLOWS: I'm just stuttering for a minute
7 because I was trying to get formal comments. We got
8 your comment. And I will come back in a minute.

9 But I want to just make sure if there are any
10 formal comments on the OU-1 proposed expansion. If not,
11 we will end the formal part of taking comments on that,
12 and you can still have questions and answers on -- like
13 Barbara's question on the broad issues.

14 MR. RIPPERDA: Her comment was a formal comment for
15 the record.

16 MS. FELLOWS: Yes. I said, you know, we got that
17 one too. And it is on the record.

18 UNIDENTIFIED SPEAKER: Ingrid.

19 UNIDENTIFIED SPEAKER: I just have a question. Not
20 a formal comment. There was -- okay.

21 MS. FELLOWS: This won't be a formal.

22 (Proceedings held off the record.)

23 MS. FELLOWS: Let's go ahead and close the formal
24 part of the thing.

25 DOROTHY THORMAN: I will just make the statement

1 that I am very glad that this process is taking place
2 because, you know, it is wonderful. And it would be
3 nice if all these sites that I hear there are so many
4 toxic sites -- I forget the name of them, but we're --

5 MS. FELLOWS: Like Superfund sites or things like
6 that?

7 DOROTHY THORMAN: Yeah. Because there are so many
8 of them. And this administration has cut back on the
9 funding for these cleanups. So I think we're very
10 fortunate to have this -- this taking place.

11 DR. SANTOS: Merrilee, do you want -- for
12 the formal comment, do you want names and any --

13 MS. FELLOWS: Do you want to state your name for the
14 record, Barbara?

15 BARBARA BENTON: Oh, yeah. Barbara Benton.

16 MS. FELLOWS: We will go ahead and stick it in, and
17 Dorothy, do you want to state your name --

18 DOROTHY THORMAN: Dorothy Thorman.

19 MS. FELLOWS: Do you want to say something?

20 MARIETTE KRUELLS: Yes. My name is
21 Marietta Krueells. I'm a 20-year plus resident in
22 Altadena. And I would like to know if it's possible to
23 have medical information from veterinarians included in
24 this because I think that is something that has been
25 ignored, and I have mentioned it before, that there's a

1 lot of horses in the area, and they are a pretty easy
2 target -- they only drink water here. They usually
3 don't travel. They don't drink bottled water. And so I
4 think that would be a good group to look for medical
5 problems.

6 That was it. Thank you.

7 MS. FELLOWS: Let's close the formal part, and I
8 will get back to Barbara. And we'll see if there's any
9 other kind of what we call informal ones. And if
10 there's, you know, when we are finished with that,
11 everybody can kind of walk around, eat some more
12 cookies, and talk to us about questions that people
13 don't like to raise in formal hearings.

14 So let me just go back to Barbara's for a
15 minute.

16 I think we have, in good faith, tried to give
17 answers to the extent we have them. We had an agency
18 for toxic disease registry -- and part of this I'm
19 saying for others of you who don't have quite the
20 background Barbara does in this -- found no health
21 effects.

22 And we had a health meeting in this room,
23 actually, in April a year ago, and we published a
24 summary of those. We had a number of medical
25 professionals and regulators and doctors come in and

1 endocrinologists and thyroid experts and talk about --
2 and Dr. Mack, the people that Barbara mentioned, talked
3 about what they saw. And that summary is on the web, on
4 our home page. Go down to the very bottom. And if
5 people do have specific health concerns, we can try to
6 get you in touch with one of the physicians that we had
7 come to the meeting, maybe you can follow up if you have
8 specific concerns, but that is kind of the state of
9 where we are at right now.

10 Does anybody else have questions about
11 off-site? I know a lot of you talked to me
12 individually, and that is fine.

13 MARIETTA KRUELLS: I have a question. I am just
14 reading this while I am sitting here. Actually, these
15 public comments are just based on the proposed plan, not
16 really anything else?

17 MS. FELLOWS: Right. They are only on what we --

18 MARIETTA KRUELLS: Do you like what you are
19 suggesting -- you think that is sufficient, that is what
20 this question is.

21 MS. FELLOWS: Yeah. You know, you kind of think of
22 it if you were a JPL employee, and we actually asked
23 this question at JPL too. And people say oh, I work on
24 instruments that are very sensitive. How much vibration
25 is this going to cause?

1 Those are legitimate questions. It's just like
2 any of the others are. So it is kind of, you know,
3 spans the spectrum, but it's really about the pipeline
4 and the treatment plant itself.

5 MARIETTA KRUELLS: Okay. Not really the medical
6 concerns and all that? The public comment is just about
7 your solution to the problem?

8 MS. FELLOWS: On this proposed plan. They are
9 always relevant to the overall cleanup issue.

10 MS. SANTOS: Yeah. And just one other point is
11 that, you know, why clean it up. You are cleaning it up
12 because it doesn't meet -- the question of why clean it
13 up is that currently the groundwater does not meet
14 drinking water standards that is underneath the site,
15 and so NASA needs to restore the aquifer. That is why
16 clean it up.

17 UNIDENTIFIED SPEAKER: I have a question.

18 Is it the dollar constraint of a
19 million dollars that Steve is talking about just
20 doubling the flow? Why not go ten times?

21 MR. SLATEN: Good question.

22 MS. FELLOWS: Could everybody hear that?

23 MR. SLATEN: I will repeat it.

24 I mentioned that we were spending a million
25 dollars to put in a couple of new wells, and it was

1 going to double the flow. And the question is why not
2 go ten times.

3 And there really is a limit to what the ground
4 will give you. Just a couple of new wells in here will
5 give us over -- a couple of hundred more cubic feet per
6 minute, and that's the maximum capacity that this plant
7 can take, for one thing. We would not -- without
8 spending many millions more, we would not be able to get
9 more volume through here than 360 or so gallons per
10 minute.

11 The other thing is it's a small enough area
12 that we don't need 10 or 20 more wells to do the job. I
13 think we can do a good job with the six wells that we
14 are proposing to have as the total expansion for this.

15 So does that get to the answer? More is not
16 necessarily always better. There's a limit to how many
17 you need. The aquifer here actually is a very good
18 aquifer, very porous and permeable, and we can get a
19 whole lot of water in and out of six wells.

20 UNIDENTIFIED SPEAKER: Do you have to have permits?

21 MR. SLATEN: We don't have to have permits.

22 You want me to answer that?

23 MR. RIPPERDA: I can answer that as well.

24 Yeah. I am Mark. I'm from the EPA. And, you
25 know, quick comments about the permits. When Lincoln

1 Avenue Water Company put a treatment system in and they
2 had to get a permit from the California Department of
3 Health Services because they actually sell that water to
4 the public. This water here is being reinjected back
5 into the ground so they don't need a permit -- so NASA
6 doesn't need a permit from the Department of Health
7 Services.

8 UNIDENTIFIED SPEAKER: Do we have to have a permit
9 from Raymond Basin to pump? Talking about treat,
10 Department of Health Services. I am not talking about
11 that permit.

12 MR. RIPPERDA: Okay. The Raymond Basin issue is,
13 you know, water rights --

14 UNIDENTIFIED SPEAKER: It's another -- another
15 hindrance, as far as I am concerned. It is another step --
16 it is another hindrance, like the Department of Health
17 Services is a hindrance.

18 MS. FELLOWS: They're like all hurdles --

19 UNIDENTIFIED SPEAKER: Right.

20 MR. RIPPERDA: So NASA is doing everything that the
21 Raymond Basin Water Board is requiring of them. They
22 are working with the Raymond Basin Water Board.

23 But the issue about the quantity of water, the
24 amount of water they are pumping here is relatively
25 small because that is cleaning up the source area. But,

1 you know, at some point in the future, NASA is going to
2 have to deal with the downgradient, what Steve is
3 calling "midplume".

4 And that is why they are going to have to be
5 pumping a lot more quantity, where the levels of the
6 perchlorate in water are much, much lower, but they are
7 still a little bit above the California drinking water
8 standard. And so probably the next time NASA comes to
9 you to talk about this they are going to be talking
10 about the downgradient drinking water levels just down
11 southeast of there. And NASA is going to have to be
12 pumping ten times the amount of water that Steve is
13 talking about now.

14 UNIDENTIFIED SPEAKER: About 20.

15 UNIDENTIFIED SPEAKER: We're talking about a decade
16 of pumping (inaudible).

17 MR. RIPPERDA: Little less.

18 MR. SLATEN: Was the question how long --

19 UNIDENTIFIED SPEAKER: Talking about a decade of
20 pumping on this site.

21 MR. SLATEN: Yes.

22 UNIDENTIFIED SPEAKER: Now, if we get into the
23 downgradient wells, are we talking about a decade from
24 that?

25 MR. SLATEN: Or two. A decade or two. I think,

1 since it's a much larger area --

2 MR. RIPPERDA: His question is when is that going to
3 start. And that is going to start much sooner.

4 Once those wells get turned on, then they all
5 have to run for a decade or two. But NASA is working as
6 hard as it can now to get those wells on as soon as
7 possible.

8 MS. FELLOWS: And we have wells operating at Lincoln Avenue
Water Company, too. So

9 that is part of that Monk Hill area as well.

10 MELODY COMFORT: I would like an update on the
11 Muir site. Did you say there is a testing well there?

12 MS. FELLOWS: Yeah. The monitoring well is there.

13 Does anybody know --

14 MR. SLATEN: Yeah. The question is, we installed,
15 in the last year, two new monitoring wells, and she
16 asked for an update. One of them she is calling the
17 Muir Well, and it's actually in the back parking lot of
18 the Muir High School, which is just a little bit off the
19 picture down here, Lincoln Avenue -- Muir High School,
20 the front of it is out here, and the back lot is kind of
21 over here.

22 New monitoring well there. We also installed a
23 new monitoring well another mile or so south, down near
24 the -- inside the city of Pasadena Water and Power
25 yards, the City yard. And we installed monitoring wells

1 there. And we have been through a couple of rounds of
2 samplings on those wells, and we have data on those
3 now. We are putting it out in our reports.

4 The data on the further south well down near
5 the Sunset area and the yard shows low levels of
6 perchlorate, which are very consistent with the levels
7 that are seen in the Pasadena drinking water wells down
8 there and the Pasadena supply wells.

9 The -- a little -- some more interesting
10 geology happened when we drilled the well that is up
11 closer in the back lot of the Muir High School in that
12 we hit the basement granite a couple of hundred feet
13 sooner than we expected to. So the basin is not nearly
14 as deep there. And that has to go with the Monk Hill --
15 the reason they call it Monk Hill, there is an
16 underground granite mountain which constricts the flow
17 of water to the south. So we hit a part of the
18 Monk Hill to find that it's shallower than we thought.

19 And there is almost no perchlorate detectible
20 there. On one method that is not an EPA approved
21 method, we saw a trace of perchlorate. I think it was
22 one-half of one part per billion, well below the -- any
23 proposed standards.

24 MS. FELLOWS: Do we have any of that well data
25 posted on the web yet? Those are Wells 25 and 26. So

1 if you went to the --

2 MELODY COMFORT: So Muir is 25?

3 MR. SLATEN: 26.

4 MS. FELLOWS: It is 26.

5 MELODY COMFORT: 26.

6 And then the other one in the City yard is 25?

7 MS. FELLOWS: Yes. They are chronological.

8 And if you can't find it, give me a call, and I

9 will e-mail it to you. If I remember, I will e-mail it

10 anyway.

11 MELODY COMFORT: Thank you.

12 MS. FELLOWS: Any other questions?

13 UNIDENTIFIED SPEAKER: Do you have an idea of the

14 site of the target area you are trying to clean? I

15 mean, miles or anything like that? And also, do you

16 have an idea of (inaudible) water you plan on cleaning

17 or --

18 UNIDENTIFIED SPEAKER: Would you repeat that?

19 MR. SLATEN: I will repeat the whole question.

20 She asked the size of this target area. And as

21 we -- it looks here where these levels are relatively

22 high, there is an area of about eight or ten acres where

23 the levels were, you know, were starting out with, you

24 know, thousands or more parts per billion which is, you

25 know, many times -- hundreds of times higher than what

1 we see further out where it is diluted like off-site.

2 So we define that eight or ten acres there by a
3 hundred, a hundred fifty feet thick area that's in.

4 So if you start doing the math, we have already
5 treated about 350-acre feet, was that --

6 KEITH FIELDS: 130.

7 MR. SLATEN: Oh, I'm sorry. 130 acre feet that we
8 have already treated. So that gives you an idea.

9 But if you think about an area eight acres, a
10 hundred feet thick, that is several hundred acre feet of
11 water. So that gives you an idea.

12 It's -- on the grand scale of things, it's
13 fairly well defined. It's a finite eight acres, a
14 hundred feet thick.

15 UNIDENTIFIED SPEAKER: It traveled around. So it's
16 like the eye of the storm.

17 Do you have an idea what the bigger picture is,
18 or am I mistaken by that --

19 MR. SLATEN: Sure. We have an idea. We want to at
20 least talk about it tonight because it's not the focus,
21 next year --

22 UNIDENTIFIED SPEAKER: All right.

23 MR. SLATEN: We are going to be really working on
24 this next year. And that's part of why we spent a
25 million dollars to put in a couple of new monitoring

1 wells down here. It is to find out how far chemicals
2 have gone. We need to define the total extent of how
3 far they have gone before we can plan a good cleanup.
4 And so we are out investigating.

5 What it looks -- it has, and I have shown
6 pictures at other -- other meetings --

7 MS. FELLOWS: And remember, when he talks about --
8 he's talking about deep groundwater. This is water way,
9 way down deep. It has no pathway exposure up to the
10 surface.

11 MR. SLATEN: This water is, you know, 6- or 800 feet
12 below the surface down in the deep groundwater in the
13 middle in some of the deeper groundwater, and it has
14 moved off-site. And we have seen it in the City of
15 Pasadena wells, which are shut down.

16 The reason Lincoln Avenue Water Company has
17 treatment that we are paying for is because our
18 chemicals are in their water wells as well.

19 We have monitoring wells a little further out
20 where we have seen -- sometimes seen a little bit of
21 chemicals, but lately they have been cleaned.

22 So to give you an idea, there is an area out
23 here, hundreds of acres in the deep groundwater, that
24 has been impacted by our chemicals at much lower levels,
25 but still impacted by chemicals. And much of that will

1 need to be cleaned up.

2 UNIDENTIFIED SPEAKER: So as far as water purveyors,
3 are you only now thinking that it is City of Pasadena,
4 some of their wells, and Lincoln Avenue, or has it gone
5 into other water purveyors?

6 MR. SLATEN: Those -- Lincoln Avenue and the City of
7 Pasadena are the ones that are definitely affected and
8 at levels that are near enough to the standards that --
9 are above the standards so that they need to be dealt
10 with.

11 We are watching closely the next two water
12 companies further down -- are Las Flores Water Company
13 and Rubio Canyon Land and Water Association. And in one
14 of those, we have seen some low levels of perchlorate,
15 but they have been below standards and not enough to
16 cause problems with the drinking water --

17 UNIDENTIFIED SPEAKER: What is the level that you
18 are talking about?

19 MR. SLATEN: Okay. I use the word "standard" a
20 little bit loosely. I should be a little more careful.

21 There is not a standard for perchlorate yet.
22 The State of California public health goal is six parts
23 per billion.

24 UNIDENTIFIED SPEAKER: Which was raised from four
25 when?

1 MR. SLATEN: Last year, January.

2 MR. TAKARA: January 2002.

3 MS. FELLOWS: 2002?

4 MR. SLATEN: Went from four to six in this last

5 year.

6 MS. FELLOWS: And Mark, did you want to add --

7 MR. RIPPERDA: We moved on. I just was going to ask

8 because we need to talk about the maps because people

9 really don't see it from back here. They don't know

10 where those wells are.

11 If you can just show where Lincoln Avenue is

12 and --

13 MR. SLATEN: Yeah. That is the Lincoln Avenue. And

14 Lincoln Avenue Water Company, their wells are here, and

15 Lincoln Avenue's treatment plants over here on

16 Olive Street.

17 And there's plenty of room up here. And this

18 is pretty informal now. People can come step up --

19 MS. FELLOWS: Woodbury would be right down in here

20 somewhere.

21 MR. SLATEN: Yeah. Woodbury runs right along down

22 here.

23 MR. RIPPERDA: And that is pretty much the extent of

24 where the groundwater is impacted above the drinking

25 water standard.

1 Lincoln Avenue Water Company, you know, their
2 wells that are close to Lincoln Avenue are a little bit
3 above that drinking water standard, and they only
4 recently went above that standard.

5 So farther to the east of that, probably just
6 south of that, the plume is below the drinking water
7 standard.

8 UNIDENTIFIED SPEAKER: Has the plume moved? Since
9 when you gave us our last update last year, have you
10 seen proof that it has moved?

11 MR. SLATEN: I see a little bit of movement, but
12 interestingly enough, not movement away from us. Wells
13 down here that used to have -- seem to have chemicals in
14 them have now been clean for a year or so, which is
15 interesting. So water does move.

16 But what I am not seeing is the plume going
17 away from us. I don't have any evidence of that.

18 I see changes right in here close by, within a
19 few hundred feet. I will see a level going down in one
20 well and going up in another well. So I know there's
21 some movement around. But if the question is, does it
22 seem to be that it's getting away from us, I don't
23 have -- the evidence looks like it's not.

24 UNIDENTIFIED SPEAKER: Why is it going to take ten
25 years?

1 MR. SLATEN: Because it's deep underground, it is
2 hard to get to, and it's a lot of water.

3 You have to pump every gallon of water up that
4 you need to and take the chemicals out of it. So it
5 takes a long time. We are talking about millions or
6 billions of gallons of water.

7 UNIDENTIFIED SPEAKER: Now, the process you
8 described last time, you are pumping up, it goes back
9 down, it picks up more --

10 MR. SLATEN: That is the process --

11 UNIDENTIFIED SPEAKER: So you are talking about 130
12 acre feet? Is that the number?

13 MR. SLATEN: That we have done in the last eight
14 months.

15 UNIDENTIFIED SPEAKER: Is that in recycled amount --

16 MR. SLATEN: That's correct.

17 UNIDENTIFIED SPEAKER: Okay.

18 MR. RIPPERDA: It is kind of like being a sponge.
19 You get soap in a sponge. You got to squeeze it --

20 MR. SLATEN: Wash it out --

21 MR. RIPPERDA: So it is kind of like the ground is
22 like a sponge holding all this water and some chemicals.
23 You just got to flush clean water through there a lot of
24 times to actually get all the stuff. You can't just
25 pump it once and be done.

1 MR. SLATEN: Sir, in the back.

2 UNIDENTIFIED SPEAKER: (Inaudible) I understand that
3 most of the water capacity was pumped out of
4 East Pasadena for the last four years, at least.

5 Is there anything -- any examination on any of
6 the wells in East Pasadena at all?

7 MR. SLATEN: Okay. I think I am going to try to
8 repeat the question. It is a bigger picture of a
9 question about East Pasadena.

10 The Raymond Basin is a big basin that is about
11 20 miles across. And there are people here that know
12 more about other parts of it than I do. And part of the
13 issue with groundwater is how much pumping goes on and
14 who gets to pump. There are court decrees that
15 allocate which companies or which cities get to pump
16 certain amounts.

17 In the past, the reason they had to do that is
18 because people would overuse that resource and use it
19 up. So now everything is covered by rules, regulations
20 about how much people can use and that is part of the
21 question, is just kind of how much pumping goes on.

22 Now, if your question is, are our -- have our
23 chemicals traveled to East Pasadena or --

24 UNIDENTIFIED SPEAKER: They have been pumping it
25 over there for (inaudible) --

1 THE COURT REPORTER: I can't hear.

2 MR. SLATEN: I think we are going to need --

3 UNIDENTIFIED SPEAKER: (Inaudible) We have
4 (inaudible) naval (inaudible) also in East Pasadena
5 (inaudible). We also have a (inaudible) weapons station
6 that was testing rockets over there and also fuel that
7 (inaudible) growing up, I knew a couple of people that
8 worked for the firm over in that area. And they were
9 dumping chemicals in the ground.

10 That's why I was wondering anything -- NASA has
11 done anything to do with checking the wells on that
12 site, plus the water that has come from that canyon into
13 Pasadena, received all that water for a number of years
14 to fill the wells up in East Pasadena --

15 MS. FELLOWS: Are you talking about
16 Kinneloa Canyon --

17 UNIDENTIFIED SPEAKER: Yes. Before that, say, maybe
18 the cut-off point would be Allen, [inaudible], out in
19 those areas, Sierra Madre Villa, Foothill -- with all
20 the chemicals (inaudible) involved the weapons
21 facilities and stuff.

22 MR. SLATEN: Let me answer it in a general way first
23 and see if anybody wants to be specific and knows more
24 about it than I do.

25 There are numerous sources of chemicals into the

1 groundwater all across the basin. Across Southern
2 California, there are hundreds, if not thousands, of
3 different places where chemicals have gotten into the
4 groundwater.

5 I know a lot about this one up close to our
6 site. I also believe that the underground movement of
7 stuff from our site has gone a limited distance and not
8 a dozen miles. There is not enough flow and pumping to
9 have moved our chemicals way over there.

10 There are other sources of chemicals that are
11 being found all the time. There's other perchlorate
12 across the Raymond Basin. I know there have to be other
13 sources of that perchlorate besides us.

14 And we kind of watch what's going on, but it's
15 not part of our cleanup responsibility to go over and
16 clean up something that we were not involved in.

17 UNIDENTIFIED SPEAKER: I understand that quite a few
18 years (inaudible) Pasadena received a lot of water in
19 the past -- groundwater filtration try to clean up.

20 And I don't know how much you know about that.
21 And in the vicinity probably 8 or 10 or 12 wells in the
22 last 15 years in Pasadena that have been taken out. I
23 don't know if you know that.

24 MR. SLATEN: Yeah. We keep up with that. We know
25 there are several other wells impacted by other sources.

1 MS. FELLOWS: Any other questions? As I said
2 before, we will talk to you afterwards.

3 UNIDENTIFIED SPEAKER: Maybe just -- you talk about
4 the wells --

5 MS. FELLOWS: Brad Boman, Pasadena, Pasadena Water
6 and Power.

7 MR. BOMAN: Yeah. I am Brad Boman, the engineering
8 manager for Pasadena Water and Power.

9 The wells that are out because of the
10 perchlorate are the four where you see the Arroyo well
11 and the four straight up and down there. Plus, by our
12 City yards, they are on Mountain and the freeway onramp
13 there. That's that area. We have got five wells there
14 that are --

15 UNIDENTIFIED SPEAKER: What about the well on
16 Mountain and Michigan?

17 UNIDENTIFIED SPEAKER: Mountain and Michigan?

18 UNIDENTIFIED SPEAKER: That well there at one time
19 (inaudible).

20 There was a park there. The well where the
21 storage facility is at --

22 UNIDENTIFIED SPEAKER: I would say that is Mountain
23 and Wilson. There is still a pumping station there, but
24 no well.

25 UNIDENTIFIED SPEAKER: Yeah. That is just a pumping

1 station that pumps water from the lower zone to a higher
2 zone, but yeah, there are no wells there.

3 MS. FELLOWS: Thank you all for coming. I do urge
4 you to fill out the evaluation forms and hang around and
5 talk to us, take advantage of all of us. We are all
6 here. And thank you again.

7 (At 7:59 p.m., the meeting was concluded.)

8 -o0o-

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 STATE OF CALIFORNIA)
) ss.
2 COUNTY OF LOS ANGELES)

3

4 I, ANN BONNETTE-SMITH, C.S.R. No. 6108, do hereby
5 certify:

6 That said Transcript of Proceedings was taken
7 before me at the time and place therein set forth and
8 was taken down by me in shorthand and transcribed into
9 computer-generated text under my direction and
10 supervision; and I hereby certify the foregoing
11 transcript of my shorthand notes so taken.

12 I further certify that I am neither counsel for
13 nor related to any party to said action nor in any way
14 interested in the outcome thereof.

15 IN WITNESS WHEREOF, I have hereunto subscribed my
16 name this 1st day of December, 2005.

17

18

19

ANN BONNETTE-SMITH

20

21

22

23

24

25